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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

NGUYEN, VAN THU T

ART UNIT PAPER NUMBER

2824

DATE MAILED: 11/30/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/629,673

Applicant(s)

KANG, HEE BOK

Examiner

VanThu Nguyen

Art Unit

2824



-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 September 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 and 2 is/are rejected.
- 7) ☒ Claim(s) 3-9 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 07/30/2003.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of Species II, claims 1-9 in the reply filed on September 29, 2004 is acknowledged.
2. Applicant is requested to cancel claims 10-20 in the next response.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claim 1 is rejected under 35 U.S.C. 102(e) as being anticipated by Horii et al. (PGPub. No. 2004/0210729).

Regarding claim 1, Horii et al. disclose, in FIG. 1, an interleave control device using a nonvolatile ferroelectric memory, comprising:

a single chip FeRAM array (2) including a plurality of single banks (3, 4) (see paragraph [0114]);

a memory interleave controller (Control Unit 5) inherently configured to program a code for controlling a memory interleave (see FIG. 7), and to change an address path (i.e. designating another memory bank) of the single chip FeRAM array depending on the programmed code (see paragraphs [0052], [0064], [0066], [0102];

and a bus configured to transfer data between the single chip FeRAM array and the memory interleave controller (lines connecting between Memory Banks 3, 4 to Data Input/Output Control Circuit 22).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Horii et al. (PGPub. No. 2004/0210729) in view of Grassi et al. (U.S. Patent No. 5,668,974).

Regarding claim 2, Horii et al. further disclose, in FIG. 1, an interleave controller (21) configured to output a control signal (CNT0/CNT1) for changing an address path of the signal FeRAM array depending on the inherent programmed code from a command decoder 20. However, Horii et al. do not disclose that the command decoder 20 comprising of nonvolatile ferroelectric memory as interleave program register.

Grassi et al. disclose an interleave control device (see FIG. 1) comprising a single memory array (103, see FIG. 11) including a plurality of single banks (M1A & M1B, see FIG. 11); a memory interleave controller (14 in FIG. 1, and more detail in FIG. 10) comprising interleave program registers (54-65, see FIG. 10) configured to program a code for controlling a memory interleave, using inherent nonvolatile register, and an interleave controller (17, see Fig. 1) for changing address path.

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Since Horri et al. and Grassi et al. are both from the same field of endeavor, the purpose disclosed by Grassi et al. would have been recognized in the pertinent art of Horri.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to use nonvolatile registers disclosed in Grassi et al. to program a code for controlling interleave operation in the interleave control device of Horri et al.

Even though Grassi et al. do not disclose the nonvolatile interleave program registers being ferroelectric memory, it would also have been obvious to one with ordinary skill in the art to realize that ferroelectric memory cells can have many applications, and being used as registers is one of them.

Allowable Subject Matter

7. Claims 3-9 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

The prior art made of record and considered pertinent to the applicant's disclosure does not teach or suggest the claimed limitations. Horri et al. and Grassi et al., taken individually or in combination, do not teach the claimed invention having a nonvolatile interleave program register with all limitations as claimed in claim 3, in combination with the remaining claimed limitations.

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Conclusion

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to VanThu Nguyen whose telephone number is (571) 272-1881.

The examiner can normally be reached on Monday-Friday, 8:00am-4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Elms can be reached on (571) 272-1869. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

VTN
November 26, 2004



VanThu Nguyen
Primary Examiner
Art Unit 2824